

Figure 1: System Model

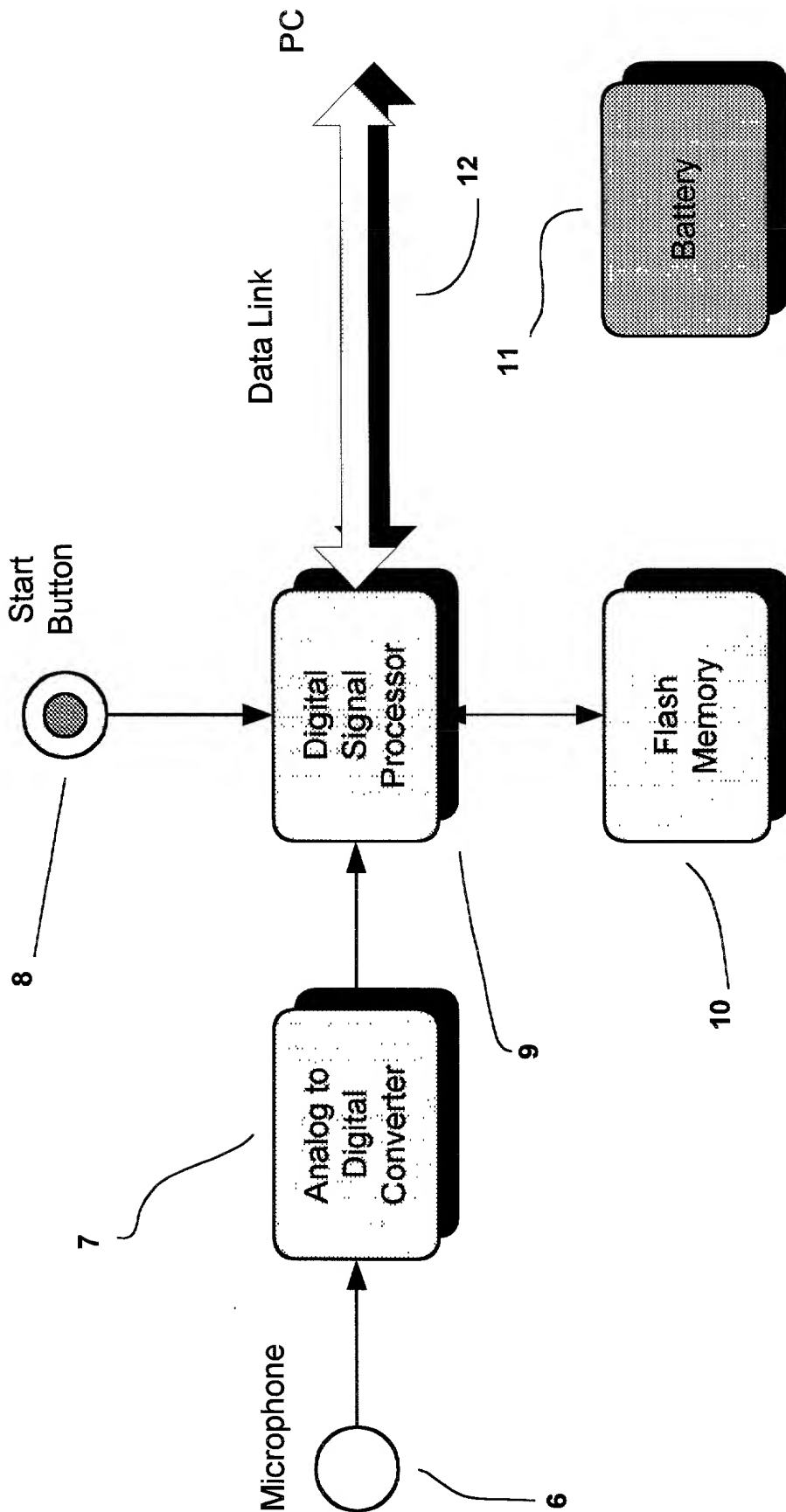


Figure 2: Typical Audio Capture Device

FIG. 3 is a block diagram of a signal recognition system. The system includes a central hub (13) connected to a website (14), a pattern recognition subsystem (16), a pattern initialization subsystem (17), a management database system (15), and a master pattern database (18). The website (14) is connected to the Internet (13). The pattern recognition subsystem (16) is connected to the central hub (13). The pattern initialization subsystem (17) is connected to the central hub (13). The management database system (15) is connected to the central hub (13). The master pattern database (18) is connected to the central hub (13). The central hub (13) is connected to the website (14), the pattern recognition subsystem (16), the pattern initialization subsystem (17), the management database system (15), and the master pattern database (18).

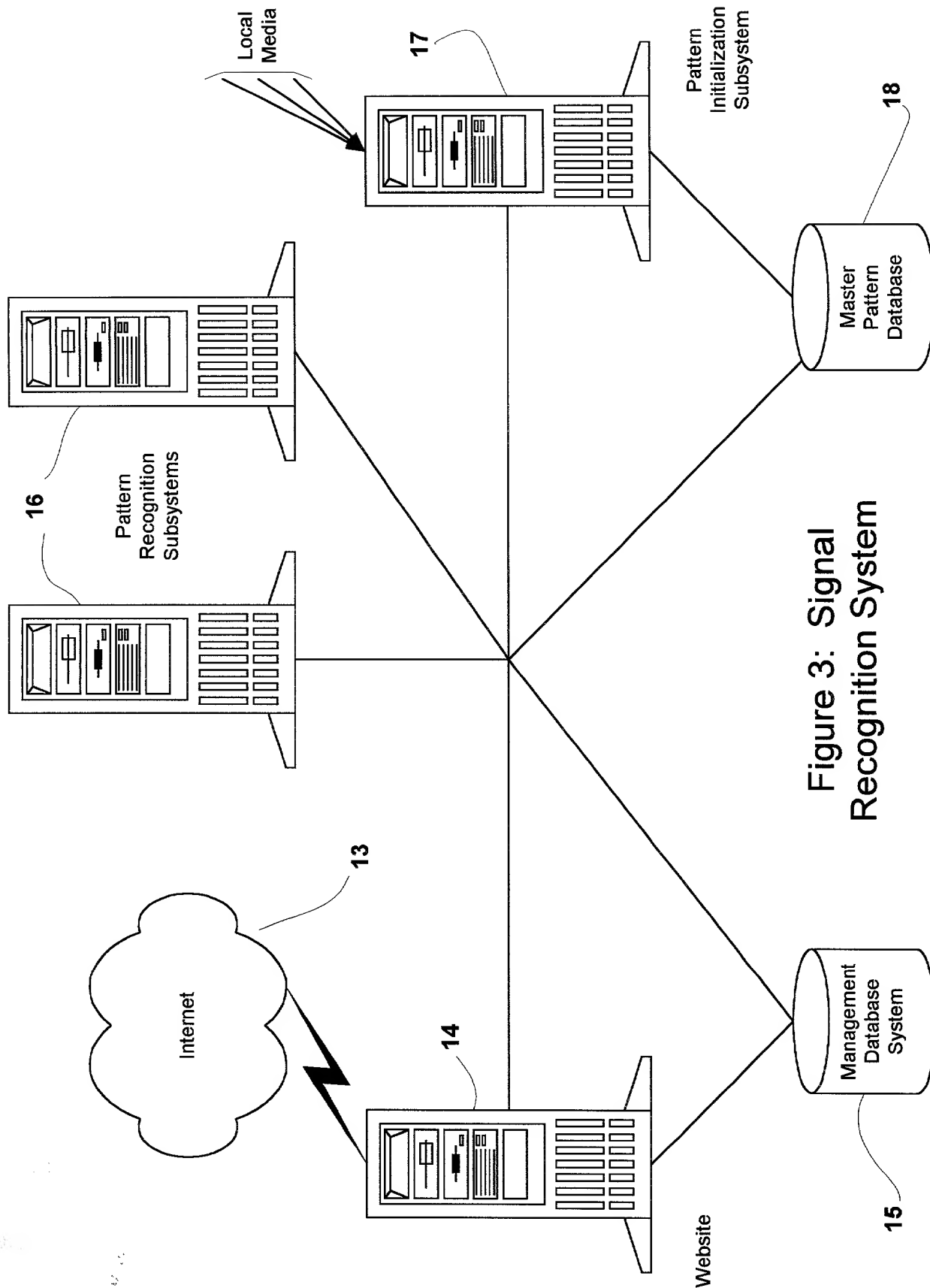


Figure 3: Signal Recognition System

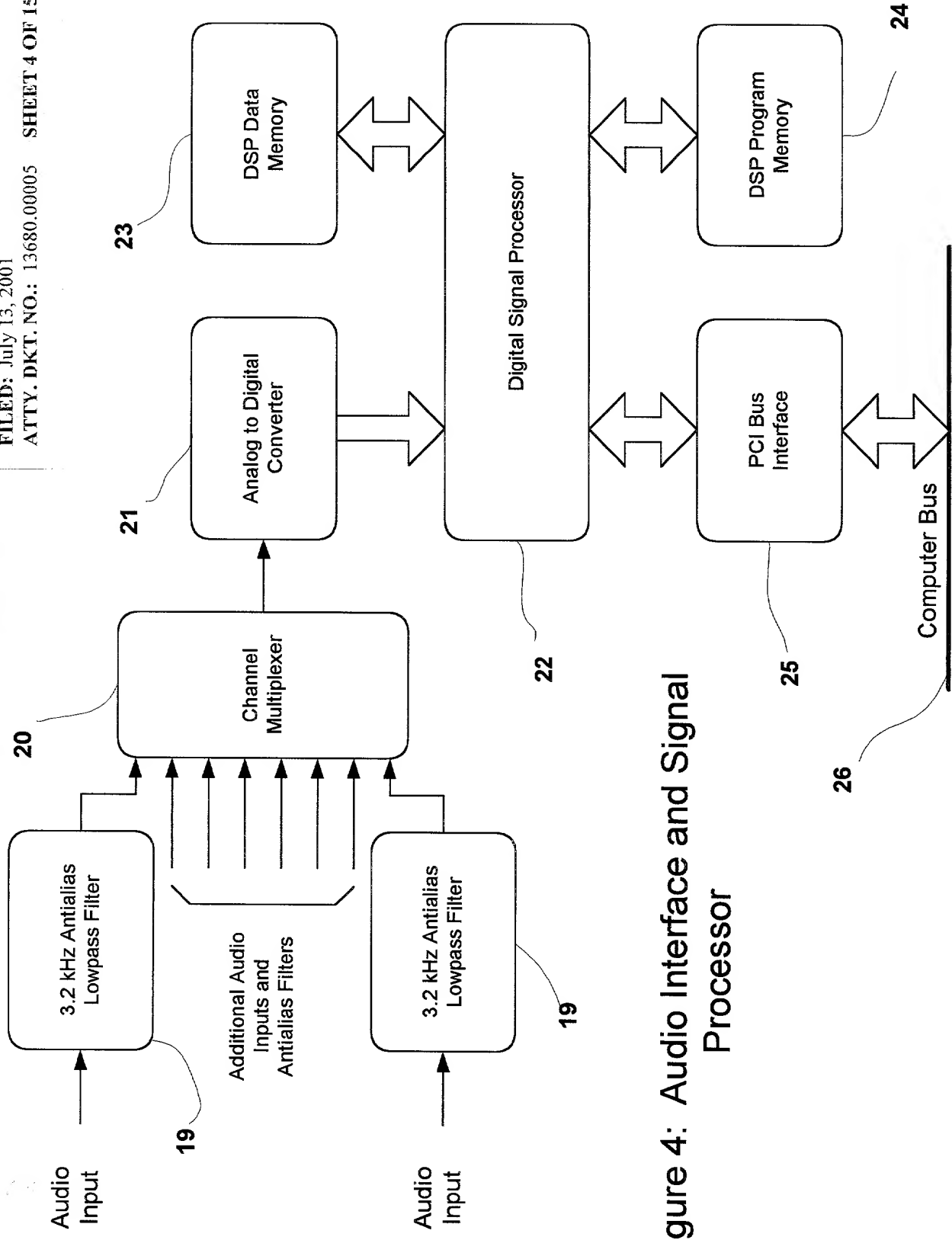


Figure 4: Audio Interface and Signal Processor

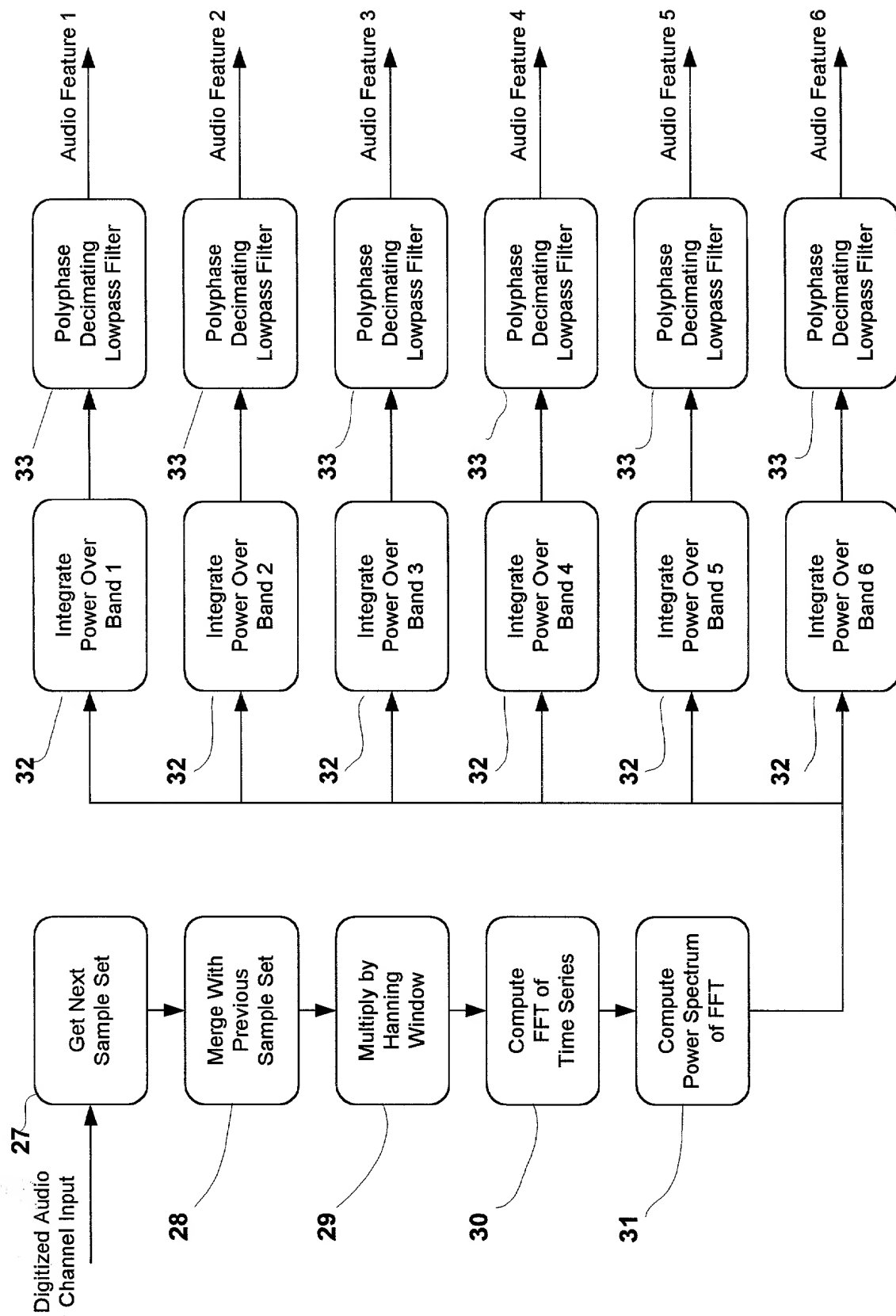


Figure 5: Audio Spectrum Analysis and Feature Extraction

INVENTOR(S): STEPHEN C. KENYON, ET AL.

APPLICATION NO.: 09/903,627

TITLE: AUDIO IDENTIFICATION SYSTEM AND METHOD

FILED: July 13, 2001

ATTY. DKT. NO.: 13680.00005 **SHEET 6 OF 15**

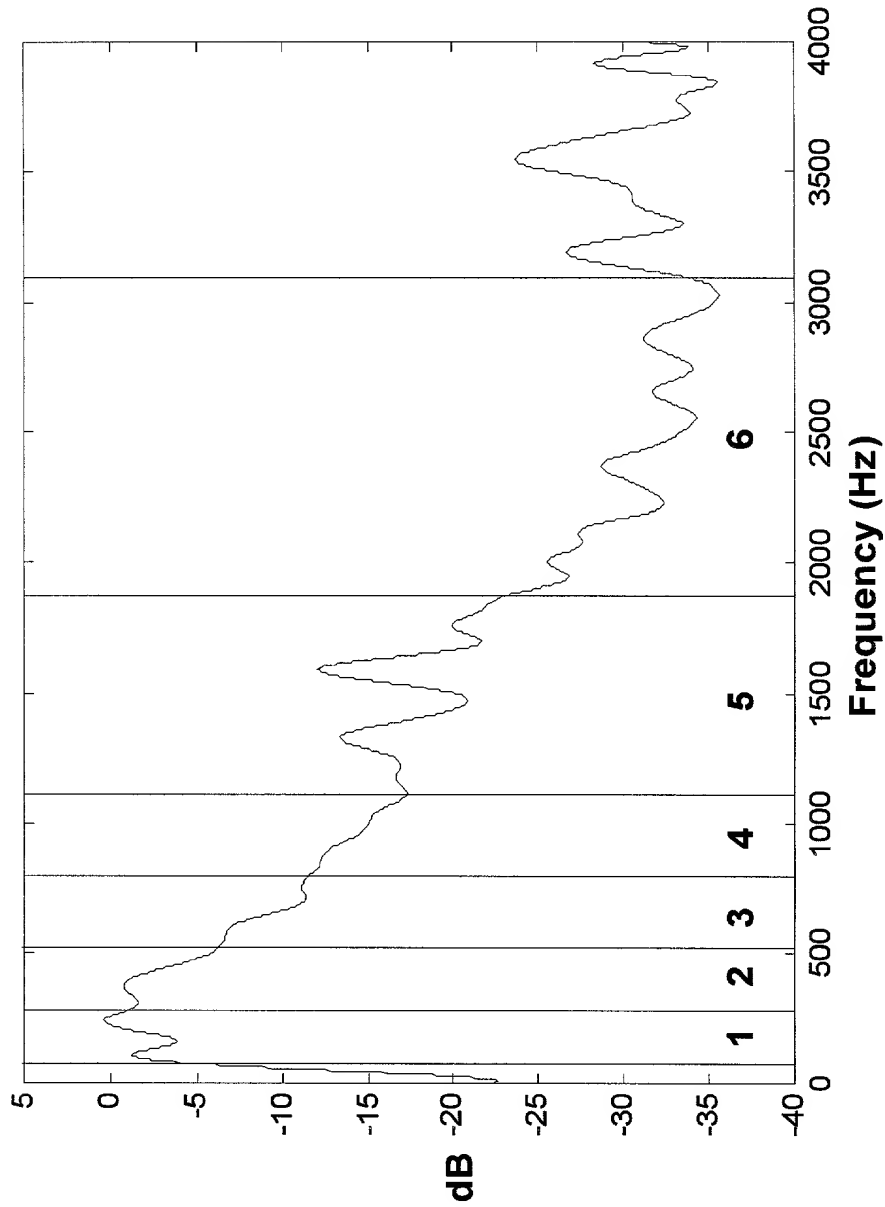


Figure 6: Audio Spectrum Analysis Bands

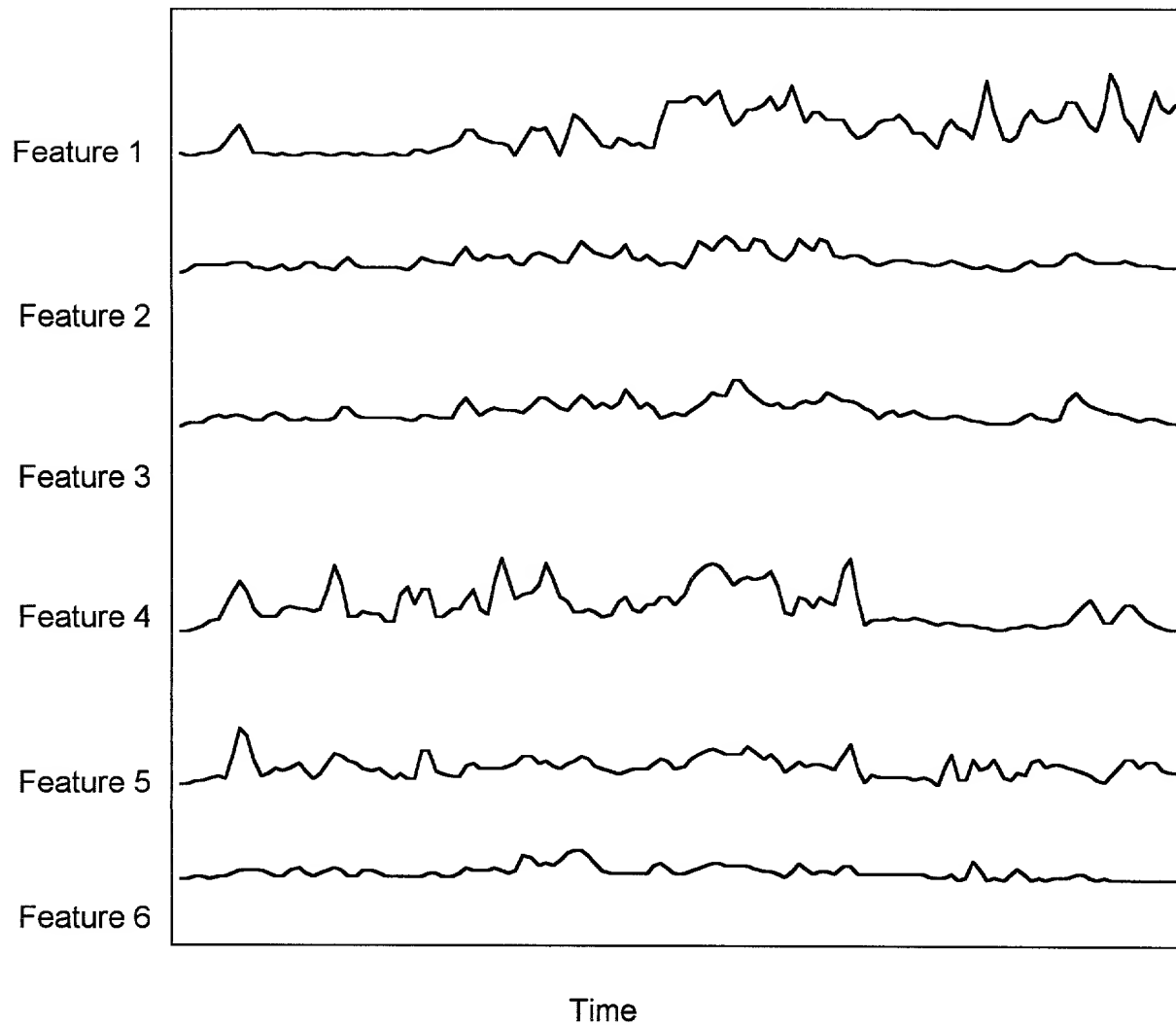


Figure 7: Example Feature Waveforms

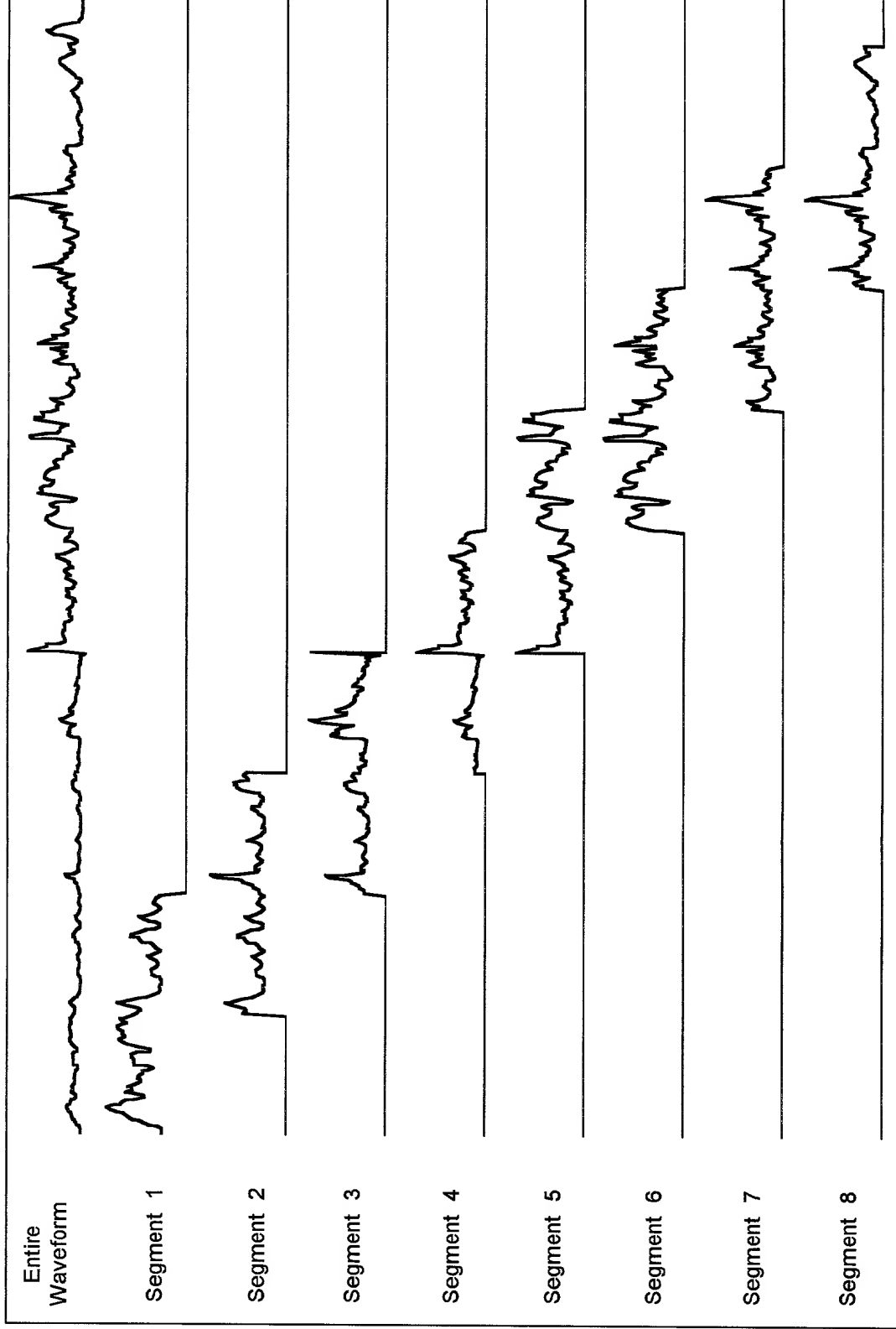


Figure 8: Reference Feature Waveform Segmentation

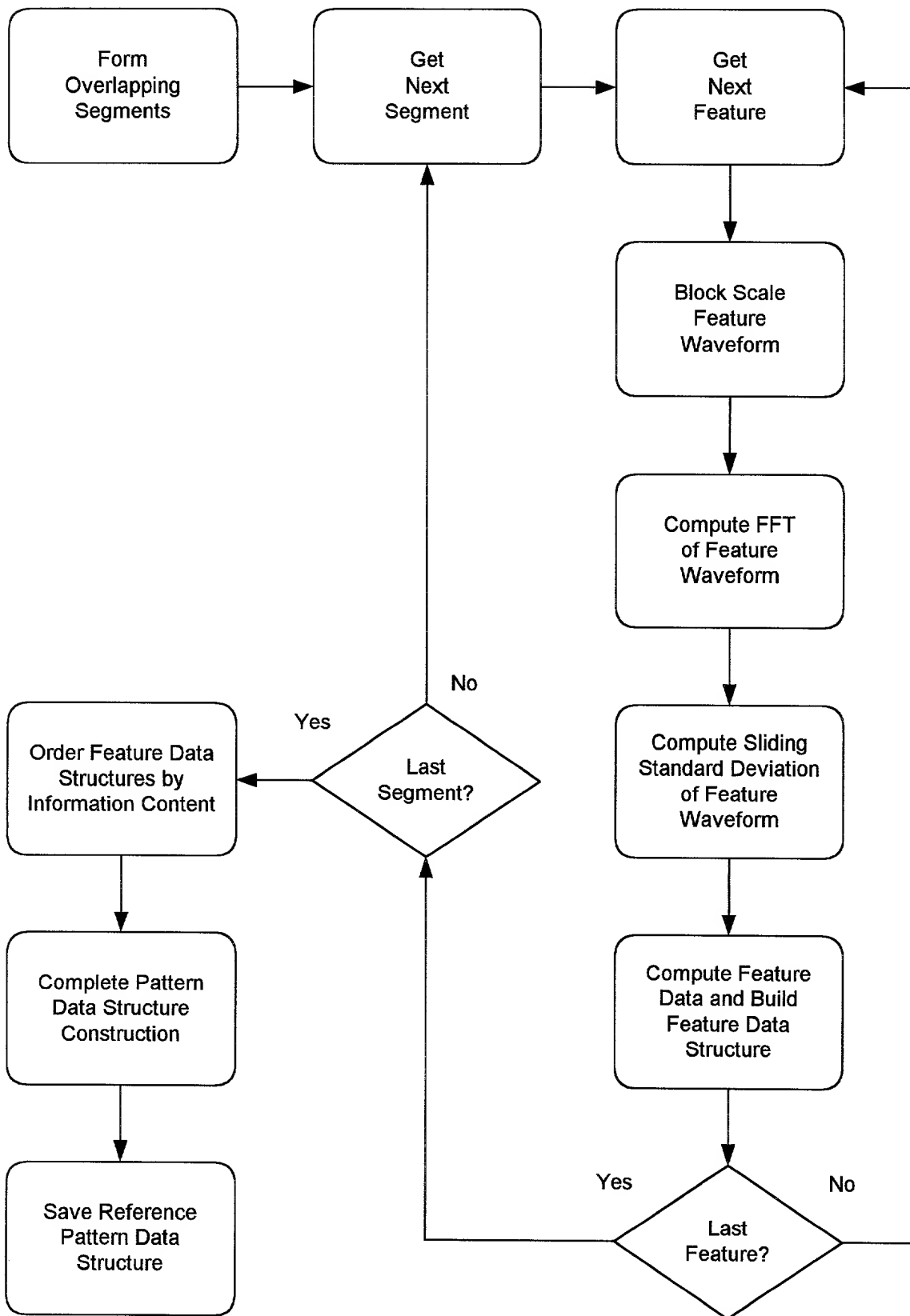


Figure 9: Reference Pattern Initialization

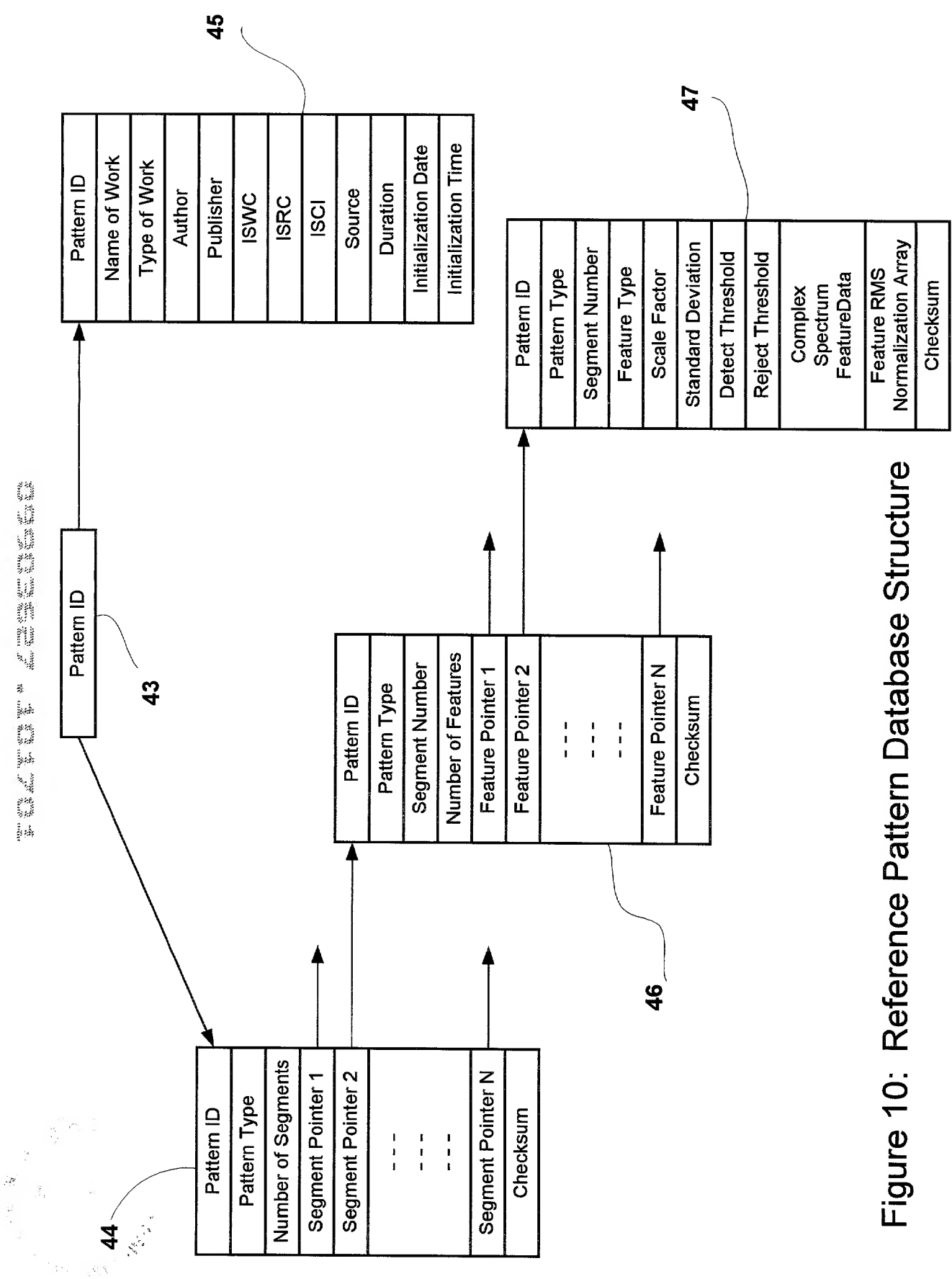


Figure 10: Reference Pattern Database Structure

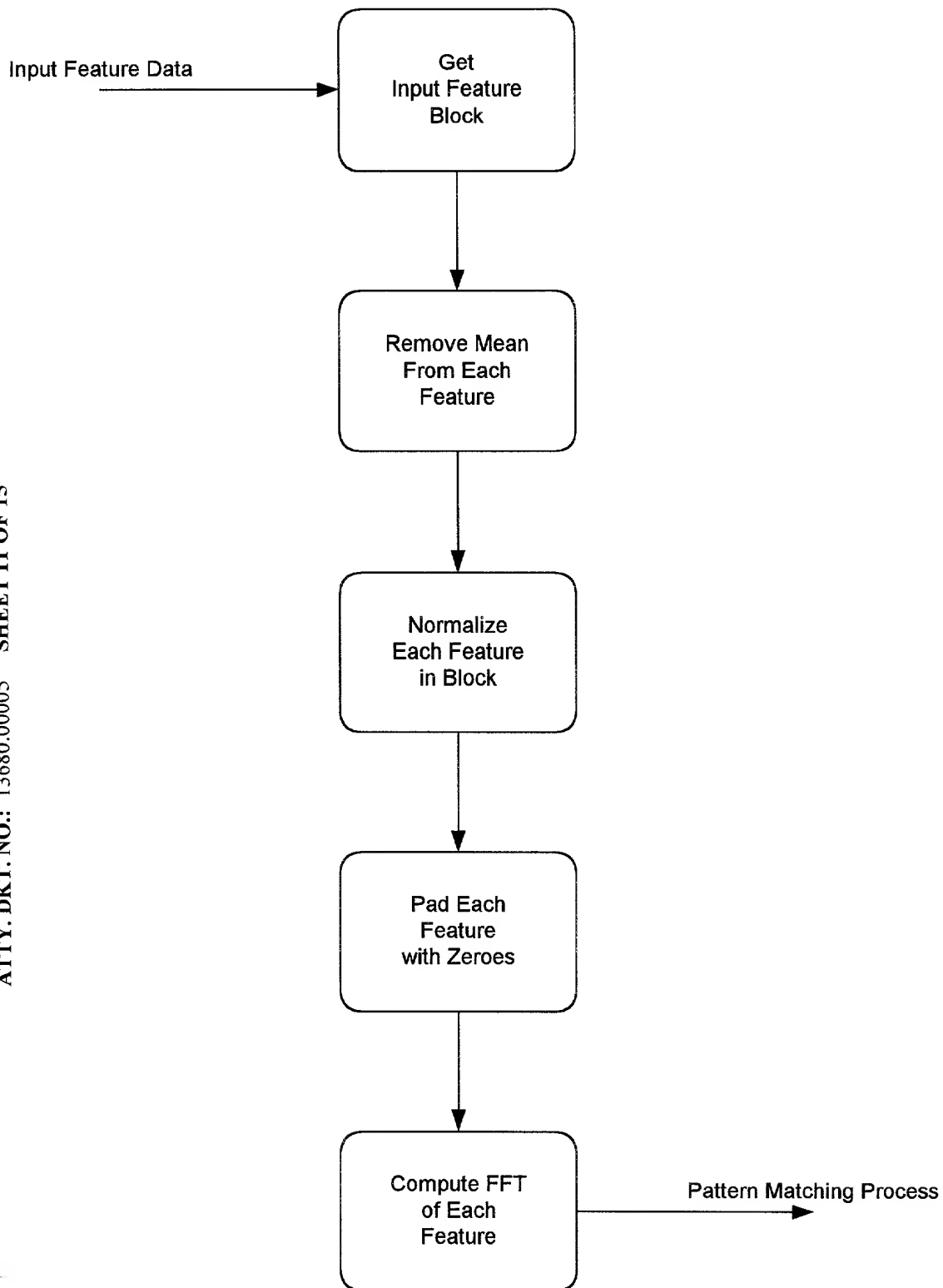


Figure 11: Real-Time Feature Block Pre-Processing

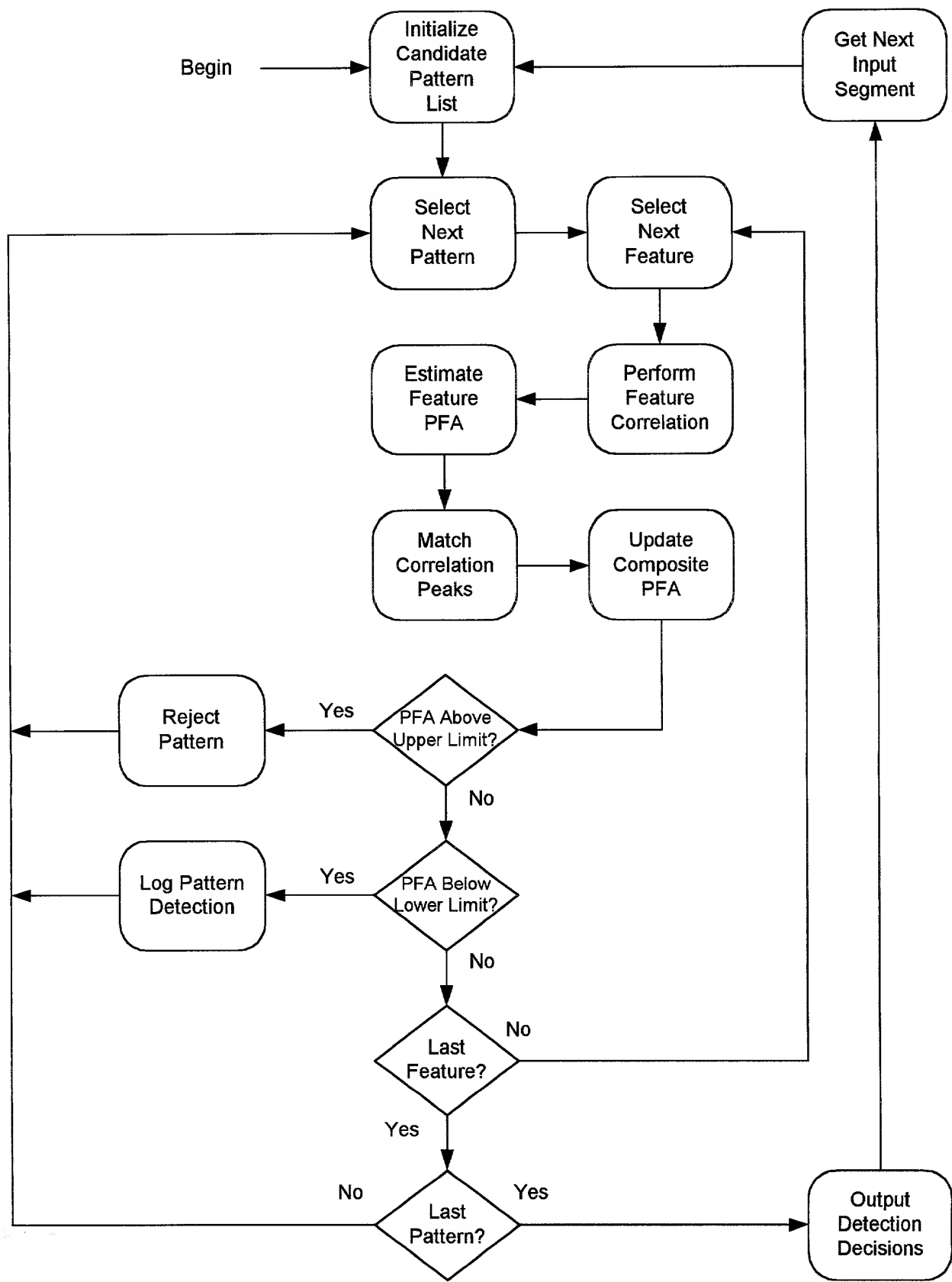


Figure 12: Multiple Feature Correlation Process

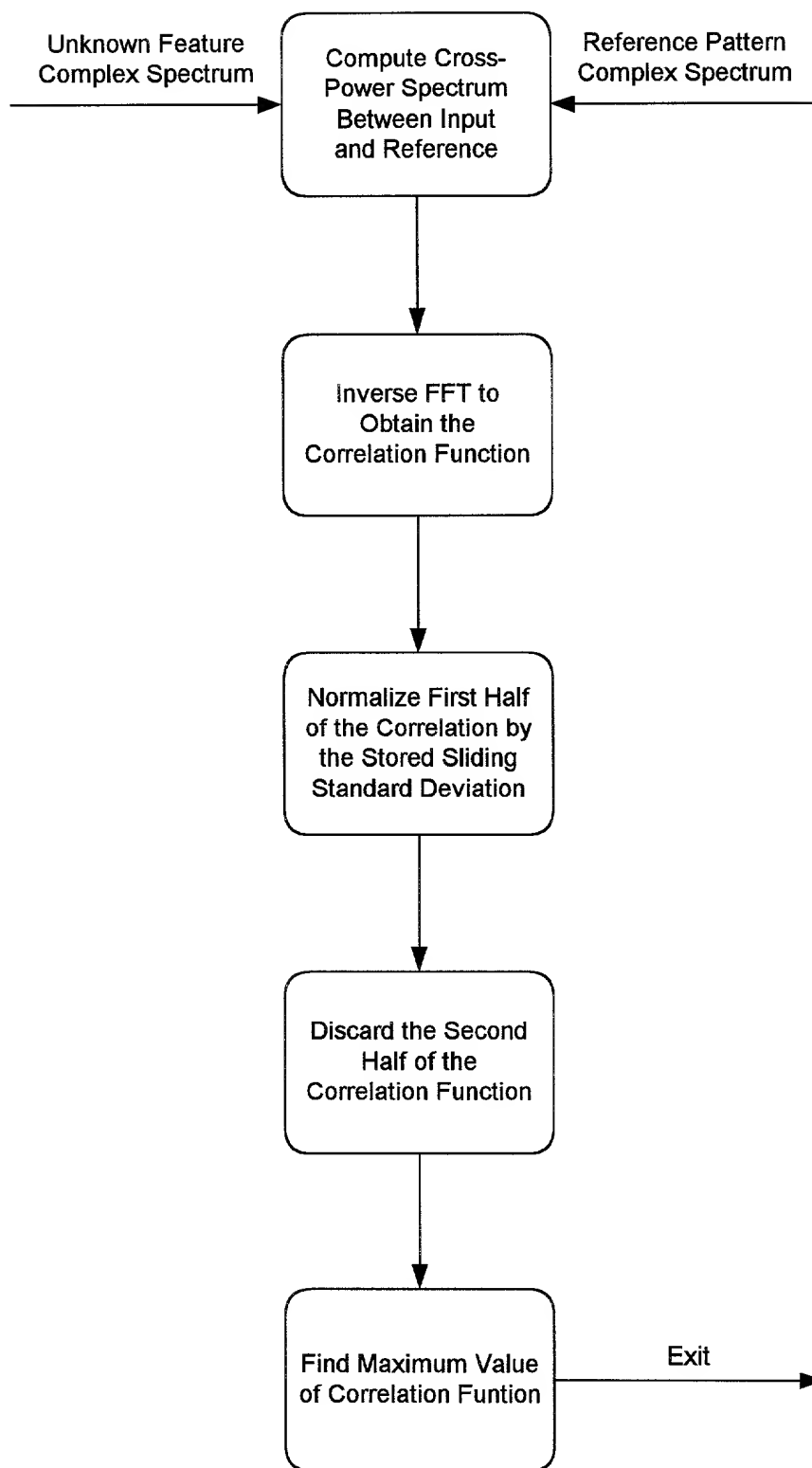


Figure 13: Feature Correlation Process

INVENTOR(S): STEPHEN C. KENYON, ET AL.
APPLICATION NO.: 09/903,627
TITLE: AUDIO IDENTIFICATION SYSTEM AND METHOD

FILED: July 13, 2001
ATTY. DKT. NO.: 13680.00005 **SHEET 14 OF 15**

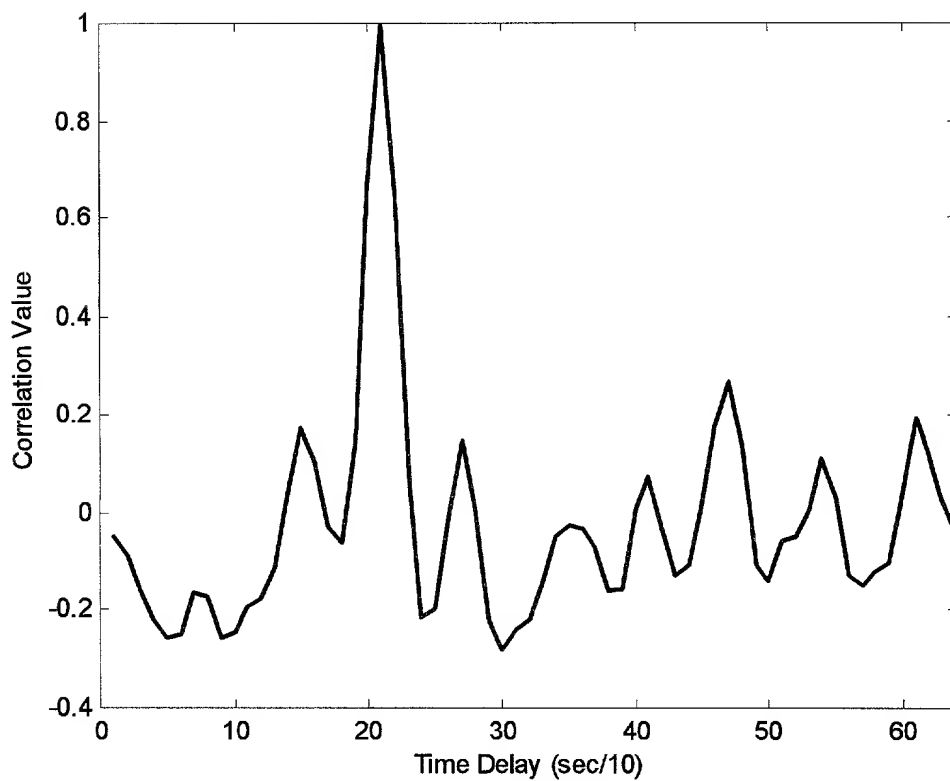
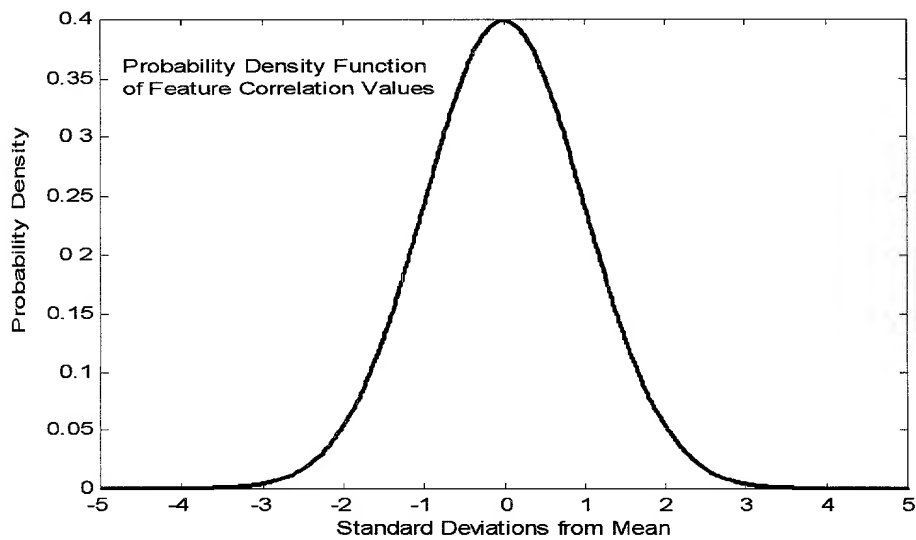
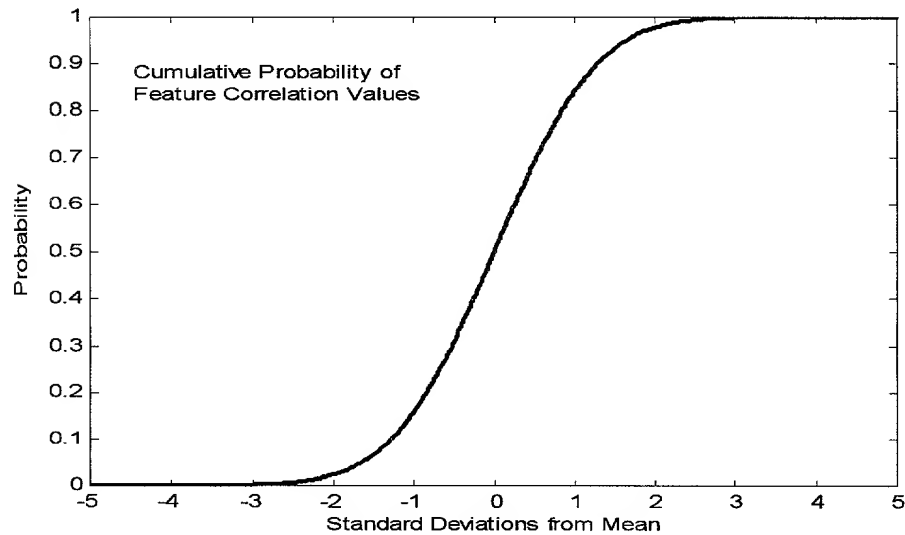


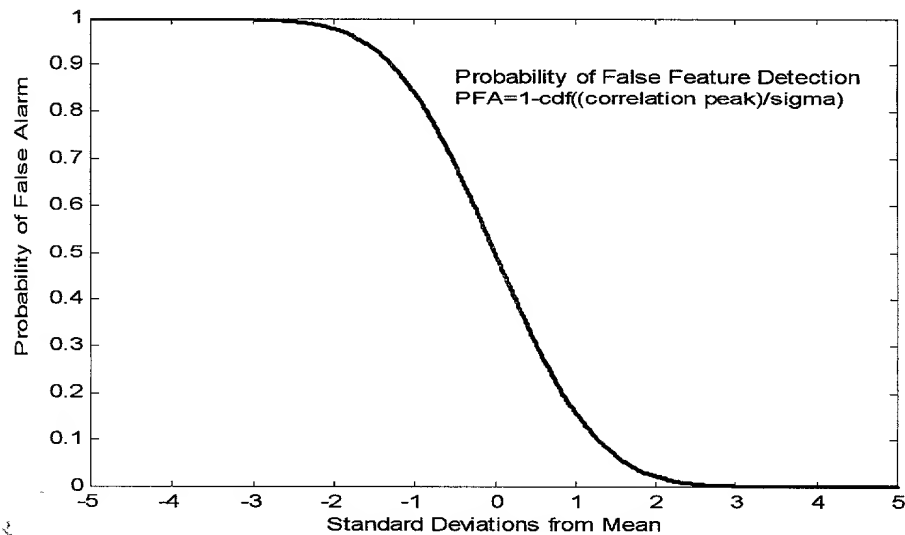
Figure 14: Example Feature Correlation Function



(A)



(B)



(C)

Figure 15: False Detection Estimation from Correlation Values